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IS 7409-2 (1994): Anaesthetic and respiratory equipment - Conical connectors, Part 2: Screw threaded weight bearing connectors [MHD 13: Veterinary Hospital Planning and Surgical Instruments]



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संवेदनाहारी एवं श्वसन उपस्कर — शंक्वाकार संयोजक

भाग 2 चूड़ीदार भार-धारक संयोजक

(दूसरा पुनरीक्षण)

Indian Standard

ANAESTHETIC AND RESPIRATORY EQUIPMENT — CONICAL CONNECTORS

PART 2 SCREW-THREADED WEIGHT-BEARING CONNECTORS

(Second Revision)

UDC 615.471: 616-089.5: 621.643

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NATIONAL FOREWORD

This Indian Standard (Part 2) which is identical with ISO 5356-2 : 1987 'Anaesthetic and respiratory equipment — Conical connectors — Part 2 : Screw-threaded weight-bearing connectors', issued by the International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards, on the recommendation of the Anaesthetic, Resuscitation and Allied Equipment Sectional Committee and approval of the Medical Equipment and Hospital Planning Division Council.

Breathing attachments of anaesthetic apparatus comprise a number of connection pieces. Fittings and other components made by different manufacturers have a large variation in dimensions which has often posed problem in using components made by different manufacturers to suit the needs of both the patient and the anaesthetist. This standard is expected to provide ready interchangeability of equipment particularly in time of emergency, without any intention to introduce standardization of design except in so far as the size and sequence of fittings are concerned.

This standard was first published in 1974 and revised in 1985 to incorporate the requirements for conical fittings for to-and-fro carbon dioxide absorber (water type) for use with anaesthetic apparatus and non-metallic materials for various components. Consequent upon the publication of ISO 5336-1 : 1987 and ISO 5356-2 : 1987, the Committee felt the necessity of revising this standard to align its requirements with the latest international practices. As a result of this revision, the sequence of joint fittings and typical arrangement of equipments for different types of anaesthetic apparatus covered earlier have been deleted. These shall be considered separately by the Committee for covering under the respective Indian Standards.

In this second revision, IS 7409 has been split in two parts. While the cones and sockets for conical connectors covered in Part 1 are satisfactory for lightweight breathing attachments, there is also a need for more substantial connectors to support heavy or fragile components and to suit such application, this standard (Part 2) has been brought out to cover screw-threaded weight-bearing connectors.

The text of the ISO standard has been approved as suitable for publication as Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
- Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In the adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their place are listed below along with their degree of equivalence for editions indicated:

<i>International Standard</i>	<i>Indian Standard</i>	<i>Degree of Correspondence</i>
ISO 262 ISO general purpose metric screws, bolts and nuts	IS 12241 : 1987 ISO general purpose sizes for screws, bolts and nuts	Identical
ISO 965-2 ISO general purpose metric screw threads — Tolerances — Part 2 : Limits of sizes for general purpose bolt and nut threads — Medium quality	IS 4218 (Part 6) : 1978 ISO Metric screw threads: Part 6 Limits of sizes for commercial bolts and nuts (diameter range 1 to 52 mm) (first revision)	Technically equivalent
ISO 5356-1 Anaesthetic and respiratory equipment — Conical connectors — Part 1: Cones and sockets	IS 7409 (Part 1) : 1994 Anaesthetic and respiratory equipment — Conical connectors — Part 1 : Cones and sockets (second revision)	Identical

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (revised)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

ANAESTHETIC AND RESPIRATORY EQUIPMENT — CONICAL CONNECTORS

PART 2 SCREW-THREADED WEIGHT-BEARING CONNECTORS

0 Introduction

0.1 ISO 5356 comprises the following two parts :

Part 1 : Cones and sockets.

Part 2 : Screw-threaded weight-bearing connectors.

0.2 While the conical connectors specified in ISO 5356-1 are satisfactory for lightweight breathing attachments, there is also a need for more substantial connectors to support heavy or fragile components. Factors governing the design of these connectors include robustness, simplicity, ease of sterilization, and ease of engagement and disengagement by hand. They should also be compatible with connectors meeting the requirements laid down in ISO 5356-1 and should, if possible, eliminate the likelihood of inadvertent misconnection, although it has to remain the responsibility of the user to check that any system in which they are used is correctly assembled before use.

Screw-threaded weight-bearing connectors specified in this part of ISO 5356 may be used for attachments within the breathing system and at the common gas outlet.

1 Scope and field of application

This part of ISO 5356 specifies requirements for screw-threaded weight-bearing conical connectors intended for use with inhalation anaesthesia apparatus and ventilators; such connectors are intended for mounting heavy accessories.

2 References

ISO 262, *ISO general purpose metric screw threads — Selected sizes for screws, bolts and nuts.*

ISO 965-2, *ISO general purpose metric screw threads — Tolerances — Part 2 : Limits of sizes for general purpose bolt and nut threads — Medium quality.*

ISO 5356-1, *Anaesthetic and respiratory equipment — Conical connectors — Part 1 : Cones and sockets.*

3 Definitions

For the purposes of this part of ISO 5356, the following definitions apply.

NOTE — Definitions have been taken from ISO 4135.

3.1 inhalation anaesthesia apparatus : Equipment intended for dispensing and delivering anaesthetic gases and vapours into a breathing system for delivery to the patient.

3.2 breathing attachments : Components intended to make up or complete a breathing system.

3.3 breathing system : Those gas pathways continuously or intermittently in communication with the patient's respiratory tract during any form of ventilation.

NOTES

- 1 In practice a breathing system usually extends from
 - a) the point of supply¹⁾ of a controlled gas mixture, for example the common gas outlet of an anaesthetic machine, or
 - b) the fresh-gas inlet of a circle system, lung ventilator, T-piece, etc., or
 - c) the fresh-gas inlet of a manually-operated resuscitator.
- 2 It usually extends to the point at which gas mixture escapes to atmosphere or a gas scavenging system, for example from an APL valve, the open end of a T-piece, etc.

³ Gas pathways exclusively concerned with gas scavenging systems are not regarded as part of the breathing system.

4 Materials

Materials used in the manufacture of screw-threaded weight-bearing connectors shall be as specified in ISO 5356-1.

1) In some situations, particularly in lung ventilators, this point may be inside a piece of equipment and should not be confused with a connection port fitted elsewhere, for example on the casing of a ventilator.

5 Design

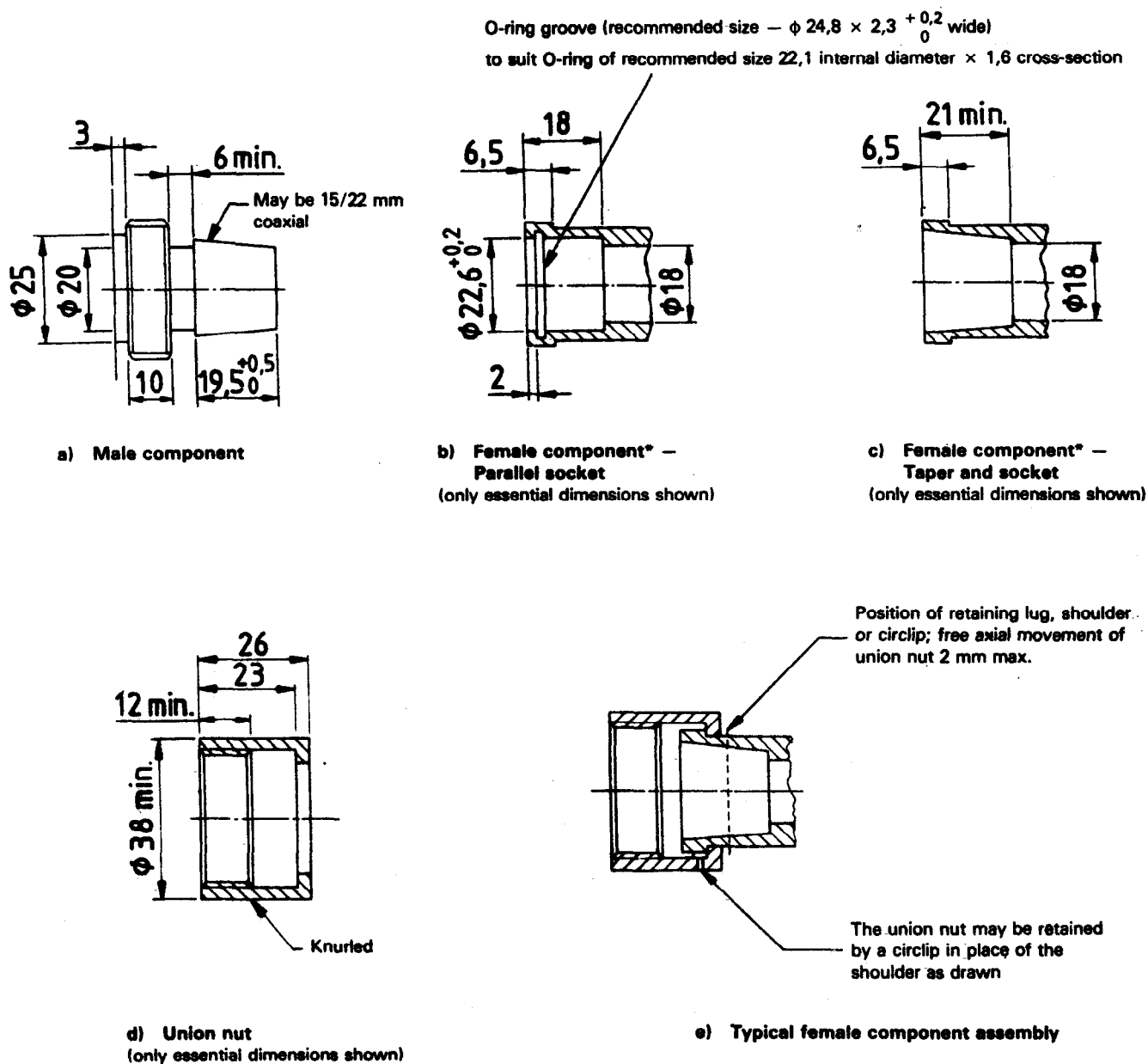
The dimensions of the components of screw-threaded weight-bearing connectors shall be as shown in the figure.

The free axial movement of the union nut on the female component shall be not more than 2 mm in order that, when the con-

nectors are unscrewed, the male and female components shall be forced apart.

All male screw threads shall be $M33 \times 2-6g$ and all female screw threads shall be $M33 \times 2-6H$ in accordance with ISO 262 and ISO 965-2.

Dimensions in millimetres



NOTES

- 1 All male screw threads : M33 \times 2-6g
All female screw threads : M33 \times 2-6H
- 2 All conical tapers as specified for 22 mm size connectors in ISO 5356-1.

Figure — Components for screw-threaded weight-bearing connectors

* 18 mm diameter intended for use within breathing systems.

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Amendments Issued Since Publication

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